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Effect of Granting Reward on Learning Outcomes of Mathematics in Class IV of Public Primary School 014680 of Buntu Pane

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Abstract

This study aims to determine the effect of granting rewards on learning outcomes of mathematics of the fourth-grade students of Public Primary School 014680 of Buntu Pane. This research is a quantitative research using correlational method. Through correlation will be determined the influence between two variables namely granting reward and learning outcomes of mathematics, although there are also qualitative data as supporting data. The population in this study is all fourth graders. In this study total sampling is used to take samples representing a population number that is considered small or less than 100, and therefore for this study the sample is consist of 50 students. Data analysis of the results obtained in this study is to use product moment correlation formula, and it is concluded that there is a significant influence of granting rewards on the learning outcomes of mathematics of students. This can be seen from the calculation of the correlation of the value of r-counted > r-table (0.493 > 0.284). Furthermore hypotheses were tested using t test. The results of the calculations show that t-counted = 4.54 while t-table = 2.011 with df = n-2 at the significance level α = 0.05 (5%), thus the hypothesis that "there is influence of granting reward on learning outcomes of Mathematics of students "is proven true by the significance of t-counted> t-table (4.54> 2.011).

Keywords: Granting Reward; Learning Outcomes of Mathematics.

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1. Introduction

Math lessons are often a frightening specter for students. Math is considered a difficult lesson as it relates to numbers and numeracy. In addition, other difficulties experienced by students are the formulas that must be used to solve a problem. Students tend to stay away from math lessons because they often have difficulty in learning it and in solving a mathematical problem.

As a result of these difficulties, students become less interested in math lessons and consequently students tend to avoid math lessons. On the other hand, students cannot forever avoid mathematics because the existence of mathematics is very important for students. Therefore, it is the teacher's job to package the learning of mathematics to be more interesting so that there is a positive attitude on the students that leads to the willingness of students to overcome their learning difficulties.

In the implementation of the 2013 curriculum, teachers are required to use existing methods and models of learning to stimulate students to be more active in learning. During the learning process, the role of the student should be more dominant so that the teacher is no longer the main actor in the learning process. However, the existence of the learning method is not enough to stimulate students' activity because students are still glued to the learning by the old model, so the supporting factor is needed to make the students more passionate in following the learning process. One of them is by granting reward or prize.

Reference [4] states that "praise spoken at the right time can be used as a motivational tool. Praise is a form of reinforcement that is positive and at the same time a good motivation. Teachers can use praise to praise the behaviors that students demonstrate in following learning activities. Praise given is in accordance with the behavior of children".

With the provision of these rewards, students are expected to be more eager in learning so that the optimal learning of mathematics can be achieved. This is in accordance with the results of research conducted by [3] which indicate that there is influence of the teacher's reinforcement on the learning outcomes of mathematics, where the reinforcement can be prize or reward. The existence of granding reward also affects the active learning of students. This is in accordance with the results of research conducted [6] that there is a very significant influence of granting rewards on the active learning of students.

In addition to granting rewards, another thing that needs to be considered to achieve optimal learning outcomes of students is the attitude of students in learning. A good learning process should be a learning process that takes into account the characteristics of students that are reflected through the attitude of students in learning. The cognitive psychologist in [5] states that teachers can more effectively teach if he knows what knowledge students have gained and what students think during teaching.

Students' attitudes in learning have an influence on mathematics learning outcomes of students. This is in accordance with the results of research by [12] that there is a close relationship between student attitudes and student achievement. The results of research by [7] concluded that there is a significant relationship between student learning attitudes and intelligence together with the achievement of learning mathematics.

The purpose of this study is to analyze and test: (1) the influence of granting reward on mathematics learning outcomes of students; (2) the influence of students' attitudes in learning on mathematics learning outcomes of students; (3) the interaction between granting rewards and students' attitudes in learning with mathematics learning outcomes of students.

2. Literature Review

Learning outcomes are overall behavioral change not just one aspect of human potential alone. That is, learning outcomes categorized by educational experts as mentioned above are not seen fragmentary or separate, but comprehensive.

In the national education system the formulation of educational objectives, both curricular and intructional objectives, is to use the classification of learning outcomes from Benjamin Bloom which broadly divides it into three domains, namely the sphere of cognitive, affective and motor.

These three domains become the object of assessment of learning outcomes. Among these three domains, cognitive domains are most widely assessed by teachers in schools because they relate to students' ability to master the content of teaching materials. From the learning process students are expected to obtain good learning outcomes in accordance with the specific instructional goals set before the learning process takes place. One way that can be done to determine the success rate of learning is to use the test. This test is used to assess the learning outcomes achieved in the subject matter provided by teachers at the school. Where the test results will be described in the form of numbers. Based on the above quotations can be concluded that the results of learning is a benchmark or a standard that determines the level of success of students in knowing and understanding a lesson material from the process of learning experience as measured by the test.

Reward is a positive reinforcement theory that comes from behavioristic theory. According to behavioristic theory, learning is a change in behavior as a result of the interaction between stimulus and response. In other words, learning is a form of change that students experience in their ability to behave in new ways as a result of the interaction between stimulus and response. According to Purnomo reward is a tool to educate children so that they can feel happy because their deeds or work gets awarded. Reward is an educational tool that is easy to implement and great fun for students. For that, the existence of rewards in an educational process is needed to improve students' learning motivation.

Reference [13] states that basic skills in the application of rewards consists of several components, namely:

a. Verbal Reward (Praise)

1. Words: good, yes, true, correct, excellent, and others
2. Sentences: your job is very good, I am happy with your work.

b. Nonverbal Reward

1. The rewards of mimic and body movement include: smile, nod, thumbs, clapping and so on.
2. Reward by approach, the teacher approaches the student to show attention, this can be done by standing beside the teacher, walking toward the student, sitting near a student or a group of students, walking by the students side.
3. Reward by touch, the teacher can express approval and appreciation to the student for his efforts and appearances by tapping his shoulders, shaking hands.
4. The reward of a symbol or object, symbolic rewards can be letters of service, may be certificates. While the form of objects can be picture cards, school equipment, pins and others.

This is in line with the statement [11] that there are several conditions that need to be considered by educators in giving rewards:

1. To give a paedagogical reward it is necessary to get to know the students and know the right respect. Prizes and awards that are wrong and incorrect can bring undesirable consequences.
2. Teachings given to children should not cause jealousy or envy for other children.
3. Giving rewards should be thrifty. Too often or constantly give prizes and rewards will result in the loss of the meaning of rewards as an educational tool.
4. The educator must be careful to reward, lest the rewards given to the children receive as wages from what he has done.
5. The rewards given to a child should not cause jealousy for the other child.

3. Research Method

This research includes the type of descriptive correlation research, ie research without giving treatment, manipulation or alteration on the independent variables, but describes a condition as it is. The depiction of conditions can be individual or in group and use numbers.

According to [2] "Population is the whole, if one wants to examine all the elements that exist within the research area, then the research is a population study". The population in this study is all students of class IV which amounted to 50 people.

The sampling technique in this research is by boring sampling technique (total sampling).

$$rxy = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N\sum X^2 - (\sum X)^2\}\{(N\sum Y^2 - (\sum Y)^2\}}}$$

where:

rxy : correlation coefficient of product moment

X : score of each item

Y : number of item scores

∑X : number of scores of distribution x

∑Y : number of scores of distribution y

∑XY : total multiplication of x and y distribution scores

$\sum X^2$: Sum of squares distribution scores x

$\sum Y^2$: Sum of squares distribution scores y

N : number of respondents

Testing the reliability of the instrument is done with the following formula of alpha cronbach:

$$rii = \frac{k}{k-1}(1 - \frac{\sum \sigma^2}{\sigma^2})$$

where:

rii : reliability of instrument

k : number of question items

$\sum \sigma^2$: number of question items

σ^2 : total variance [10]

Reliability test at Public Primary School 014680 of Buntu Pane about granting rewards and mathematics learning outcomes. From the questions that have been valid, then sought the reliability value to find out the results obtained will be the same when tested to another place.

(1) Trial of Reliability of Granting Reward:

The results of the reliability test results yielded a value of 0.668. If with Spearman r-table with n = 50-2 is 0.284 then r-counted > r-table. So the questionnaire is considered reliable and the results will remain the same wherever the research is done.

(2) Trial of Reliability of Learning Outcomes of Mathematics:

The results of the reliability test calculation yields nil 0,607. When compared to Spearman r-table with n = 50-2 is 0.284 then r-counted> r-table. So the questionnaire is considered reliable and the results will remain the same wherever the research is done.

The next r-counted is consulted through the correlation index as follows:

Table 1: Correlation Index

Value of r	**Correlation Index**
0,80 – 1.00	High
0,60 – 0,799	Fair
0,40 – 0,599	Somewhat low
0,20 – 0,399	Low
0.00 – 0,188	Very low

Table 2: Validity-Test of Questionnaire of Granting Reward

No. Item	r_{table}	$r_{counted}$	Remarks
1	0.284	0.418	Valid
2	0.284	0.472	Valid
3	0.284	0.478	Valid
4	0.284	0.602	Valid
5	0.284	0.522	Valid
6	0.284	0.490	Valid
7	0.284	0.437	Valid
8	0.284	0.502	Valid
9	0.284	0.363	Valid

Result of validity test of questionnaire about learning outcomes of mathematics can be seen in following table:

Table 3: Validity-Test of questionnaire about learning outcomes of mathematics

No. Item	r_{table}	$r_{counted}$	Remarks
1	0.284	0.417	Valid
2	0.284	0.446	Valid
3	0.284	0.403	Valid
4	0.284	0.427	Valid
5	0.284	0.620	Valid
6	0.284	0.551	Valid
7	0.284	0.392	Valid
8	0.284	0.544	Valid
9	0.284	0.363	Valid
10	0.284	0,416	Valid

4. Results Of Study

Data on the score of granting reward is obtained from the questionnaire given to the student, and from the questionnaire the lowest score 16 and the highest score 38 is obtained. To interpret the scores that have been obtained, the score of granting reward of fourth grade students of Public Primary School 014680 of Buntu Pane can be seen from the table of grouping scores of granting rewards as follows:

Table 4: Grouping Scores of Granting Reward

Score of Granting Reward	Number of Students		Criteria
	F	%	
$\overline{X} < 19,5$	5	10 %	Low
$19,5 \leq \overline{X} \leq 28,5$	27	54 %	Medium
$\overline{X} > 28,5$	18	36 %	High
Total	50	100 %	

Table 5: Grouping Scores of Mathematics Learning Outcomes

Score of Granting Reward	Number of Students		Criteria
	F	%	
$\overline{X} < 25$	11	22 %	Low
$25 \leq \overline{X} \leq 35$	32	64 %	Medium
$\overline{X} > 35$	7	14 %	High
Total	50	100	

To see the relationship between learning guidance variables (X) and learning outcomes of students (Y), then the analysis used to test is the formula Product Moment Correlation Analysis.

This shows that the correlation between granting reward and mathematics learning outcomes of the fourth-grade students of Public Primary School 014680 of Buntu Pane is 0.493, thus the correlation index is included in the category of somewhat low (0.40 - 0.599).

Furthermore, to test the significance of the influence of granting reward on the learning outcomes of mathematics through t test was obtained t-counted is 4.54 while t-table is 2.011. So it can be concluded that there is a positive and significant influence of granting rewards on the learning outcomes of mathematics ot the fourth-grade students of Public Primary School 014680 of Buntu Pane. This means that the research hypothesis is **accepted**.

5. Discussion

The journal that can be used as discussion materials is a journal entitled "The Effect of Reward and Punishment on Learning Outcomes of Mathematics in the Essential Materials of Cube and Beams of Students in Class VIII A in Madrasah Tsanawiyah of Darul Huda Wonodadi (2014)" which was written by Mutmainah [9] and indicated that Reward had an influence on the learning outcomes of the students. Another journal entitled "The Influence of Student Response to Granting Reward and Punisment on Motivation to Study Mathematics in Students of Class V A of MI Ma'arif Bego Maguwoharjo, Depok Sleman in Learning Year 2014/2015" written by Ana Fitarina [1] also indicates that by using rewards there is a relationship between student responses to granting reward and punisment with motivation to learn math. In his view, probability is evaluated in terms of the expected waiting time until a win, and thus both kinds of decisions actually reflect the discounting of delayed rewards. Others [15, 16, 17, 18] have suggested that decisions involving delayed rewards may be thought of as gambles, in that waiting for rewards may be risky. In this view, delay is evaluated in terms of the expected odds against receiving the reward, and thus both kinds of decisions actually reflect the discounting of

probabilistic rewards. In addition, the present study is in line with J. Bruner's theory. This theory is very supportive in the implementation of research that has been tested on students of class V in Public Primary School 014680 of Buntu Pane. J. Bruner mentions that teachers should give their students the chance to become a problem solver, a scientist, historian or mathematician [14].

6. Conclusions

Based on the results of the analysis and discussion that has been done, it can be taken several conclusions as follows:

1. To find out the hypothesis that granting reward variable has an effect on the mathematics learning result of the fourth-grade studens of Public Primary School 014680 Buntu Pane can be seen from t-test analysis. The t-test calculation shows that t-counted = 4.54 while t-table = 2.011 with df = n - 2 at significance level α = 0.05 (5%). Thus the hypothesis which states "there is influence of granting reward on mathematics learning result of the fourth-grade students of Public Primary School 014680 of Buntu Pane is proved true by t-counted > t-table (4.54> 2.011).

7. Suggestions

From the results of research and conclusion, it can be submitted suggestions as follows:

1. Students should continue to strive to improve learning outcomes by being more active in learning both in the classroom and outside the classroom.
2. Teachers should give rewards to students, so that students become more aggressive trying to improve or enhance the achievements that have been achieved.
3. The school is expected to improve the quality in terms of students by motivating students to be more active in learning and improving facilities and infrastructure of learning that support.

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